

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1-12. (Cancelled)

13. (Currently amended) A dual band mixer, comprising:

a first transistor to mix a first local oscillator input signal that oscillates with a first high period and a first low period with a first radio frequency input signal;

a second transistor to mix a second local oscillator input signal that oscillates with a second high period and a second low period with a second radio frequency input signal, the second radio frequency input signal operating at a different radio frequency band than the first radio frequency input signal;

a common node for at least one of the first radio frequency input signal and the second radio frequency input signal and an intermediate frequency output signal, wherein drains of the first and second transistors are coupled to the common node; and

interconnection circuitry to turn off the second transistor when the first local oscillator input signal is applied to the first transistor during the first high period and the first low period and to turn off the first transistor when the second local oscillator input signal is applied to the second transistor during the second high period and the second low period.

14. (Cancelled)

15. (Original) The dual band mixer of claim 13, wherein the first and second transistors are field effect transistors.

16. (Original) The dual band mixer of claim 15, wherein the first and second transistors are depletion-type transistors.

17. (Original) The dual band mixer of claim 13, wherein the interconnection circuitry includes a first network associated with the first transistor to generate a first negative voltage at a first node when the first local oscillator signal is applied to the gate of the first transistor and a second network associated with the second transistor to generate a second negative voltage at a second node when the second local oscillator signal is applied to the gate of the second transistor.

18. (Original) The dual band mixer of claim 17, wherein the first network includes a first diode connected between the gate of the first transistor and the first node, and a first capacitor and a second diode connected in parallel between the source of the first transistor and the first node.

19. (Original) The dual band mixer of claim 18, wherein the second network includes a third diode connected between the gate of the second transistor and the second node, and a second capacitor and a fourth diode connected in parallel between the source of the second transistor and the second node.

20. (Original) The dual band mixer of claim 17, further comprising a common line coupling the first and second nodes.

21. (Currently amended) A dual band mixer, comprising:  
a plurality of transistors to mix a plurality of local oscillation input signals with a plurality of radio frequency input signals, each of the plurality of radio frequency input signals operating at a different frequency band;

a common node for at least one of the plurality of frequency input signals and an intermediate frequency output signal; and

interconnection circuitry coupling the plurality of transistors, the interconnection circuitry configured to turn off transistors other than one transistor at which a local oscillation input signal is received during a high period and a low period of the one transistor.

22. (Currently amended) A method of mixing in a dual band mixer, comprising:  
mixing a first local oscillator input signal that oscillates with a first high period and a first low period with a first radio frequency input signal at a first transistor;  
mixing a second local oscillator input signal that oscillates with a second high period and a second low period with a second radio frequency input signal at a second transistor, the second radio frequency input signal operating at a different radio frequency band than the first radio frequency input signal;  
turning off the second transistor during the first high period and the first low period when the first local oscillator input signal is applied to the first transistor and turning off the first transistor during the second high period and the second low period when the second local oscillator input signal is applied to the second transistor; and  
sensing an intermediate frequency output signal from a common node for at least one of the first radio frequency input signal and the second radio frequency input signal and the intermediate frequency output signal.

23. (Previously presented) The dual band mixer of claim 21, wherein the plurality of transistors each have a source coupled to ground.

24. (Previously presented) The dual band mixer of claim 21, wherein the plurality of transistors are field effect transistors.

25. (Previously presented) The dual band mixer of claim 24, wherein the plurality of transistors are depletion-type transistors.

26. (Previously presented) The dual band mixer of claim 21, wherein the circuitry does not require an external voltage source.

27. (Previously presented) The method of claim 22 further comprising:  
generating a first negative voltage at a first node when the first local oscillator signal is applied to the gate of the first transistor, the first negative voltage to deactivate the second transistor; and

generating a second negative voltage at a second node when the second local oscillator signal is applied to the gate of the second transistor, the second negative voltage to deactivate the first transistor.